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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/039,330

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Shlomi Amon

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02/08/2006

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CAMBRIDGE, MA 02142

EXAMINER

LEUNG, CHRISTINA Y

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/039,330

Applicant(s)

ARNON ET AL.

Examiner

Christina Y. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 and 44-77 is/are pending in the application.
- 4a) Of the above claim(s) 1-36, 46-60 and 62-77 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 44, 45 and 61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9-8-03, 8-16-04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicants election of embodiment 6, directed to Figure 9, in the reply filed on 14 November 2005 is acknowledged. Because Applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). The requirement is deemed proper and is therefore made FINAL.

However, Examiner respectfully disagrees that claims 1-27, 44-47, 61-68, 70-73 and 75-77 are all directed to the elected embodiment. As indicated in the restriction requirement, embodiment 6 is directed to Figure 9, which illustrates an embodiment of Applicants' invention including RF subcarrier signals (see elements labeled RF1, RF2, etc. in Figure 9, and note that the discussion of Figure 9 in the specification is primarily directed to elements related to RF subcarrier signals). Examiner respectfully notes that embodiment 6 and Figure 9 are not directed to altering a gain of an avalanche photodiode (APD), altering a gain of an amplifier, transferring capacity of network elements responsive to signal level, or pilot signals. Those features correspond to other embodiments/figures as distinguished in the restriction requirement. Therefore, Examiner respectfully submits that out of the claims listed by Applicant, only claims 44, 45, and 61 are properly directed to embodiment 6 and Figure 9.

Claims 1-24 include limitations directed to altering a gain of an avalanche photodiode (APD). Examiner respectfully notes that claims 1-24 are therefore directed to embodiment 1 (shown mainly in Figure 2, with additional detail regarding opto-electric transducer 80 in Figure

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3; see also the corresponding discussion in the specification), which is a separate embodiment as indicated in the restriction requirement.

Claims 25-27, 46, 47, and 75-77 include limitations directed to altering a gain of an amplifier. Examiner respectfully notes that claims 25-27, 46, 47, and 75-77 are therefore directed to embodiment 2 (see Figure 5 and corresponding discussion in specification; see gain device elements 153 and 158 in amplifiers).

Claims 62-64 include limitations directed to transferring capacity of network elements responsive to a level of the signals. Examiner respectfully notes that claims 62-64 are therefore directed to embodiment 7 (Figure 10 illustrates this transferring of capacity; see also discussion of Figure 10 in the specification).

Claims 62-74 include limitations directed to pilot signals. Examiner respectfully notes that claims 62-74 are therefore directed to embodiment 8 (Figure 11 includes pilot generator elements 284 and 292, etc.).

2. Claims 44, 45, and 61 are directed to elected embodiment 6 and Figure 9. Claims 1-36, 46-60, and 62-77 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected embodiments, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 14 November 2005 (see first paragraph above).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 44, 45, and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by Tang (US 5,339,184 A).

Regarding claim 44, Tang discloses an apparatus for transferring information within a cellular communications network (Figures 2, 3A, 4B, and 5), comprising:

a first network-element of the network (base terminal 13, shown in Figure 2), comprising:

an input adapted to receive a plurality of RF signals 15 (column 3, lines 61-65);

at least one mixer adapted to modulate a respective RF sub-carrier with a respective RF signal received by the input (Figure 3A shows details of the RF-IF frequency converter in base terminal 13, including frequency converters FC-1...FC-M; each frequency converter includes a respective mixer and respective RF sub-carrier, as shown in Figure 5; column 4, lines 55-61; column 5, lines 24-60)

a combiner adapted to generate a combined RF signal from the plurality of RF signals received by the input, one or more of the RF signals being combined after being modulated by the mixer (Figure 3A; column 3, lines 65-68; column 4, lines 1-3); and

an optical transmitter (laser 19) which is coupled to transmit an optical carrier modulated with the combined RF signal; and

a second network-element of the network (remote terminal 14, shown in Figure 2), comprising:

an optical receiver (detector 22) which is adapted to receive the modulated optical carrier and to recover the combined RF signal;

a splitter which is coupled to recover from the combined RF signal a plurality of RF signals (Figure 4B; column 4, lines 55-61); and

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at least one mixer which is adapted to demodulate one or more of the RF signals from the splitter (again, each frequency converter shown in Figure 4B includes a respective mixer, as shown in Figure 5; column 5, lines 24-60).

Regarding claim 45, Tang discloses that the at least one mixer of the second network element comprises a mixer for each of the RF signals provided by the splitter (Figures 4B and 5; column 5, lines 24-60).

Regarding claim 61, as similarly discussed above with regard to claim 44, Tang discloses a method for transferring information within a cellular communications network (Figures 2, 3A, 4B, and 5), comprising the acts of:

- modulating a first RF sub-carrier with a first RF signal to form a first modulated sub-carrier (using frequency converter FC-1 shown in Figure 3A, for example);

- modulating a second RF sub-carrier with a second RF signal to form a second modulated sub-carrier (using another frequency converter shown in Figure 3A);

- adding the first and second modulated sub-carriers to generate a combined RF signal;

- transmitting an optical carrier modulated with the combined RF signal from a first network-element of the network (using the laser shown in Figure 3A, which corresponds to laser 19 in Figure 2; column 3, lines 61-68; column 4, lines 1-3 and lines 55-61);

- receiving the modulated optical carrier in a second network-element of the network and recovering the combined RF signal (using detector 22 shown in Figure 2, which corresponds to the PD element in Figure 4B; column 4, lines 4-12);

- separating the combined RF signal into the first modulated sub-carrier and the second modulated sub-carrier (Figure 4B);

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recovering the first RF signal from the first modulated sub-carrier (using corresponding frequency converter FC-1 shown in Figure 4B); and

recovering the second RF signal from the second modulated sub-carrier (using another corresponding frequency converter shown in Figure 4B; column 5, lines 24-60).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christina Y Leung
Christina Y Leung
Primary Examiner
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